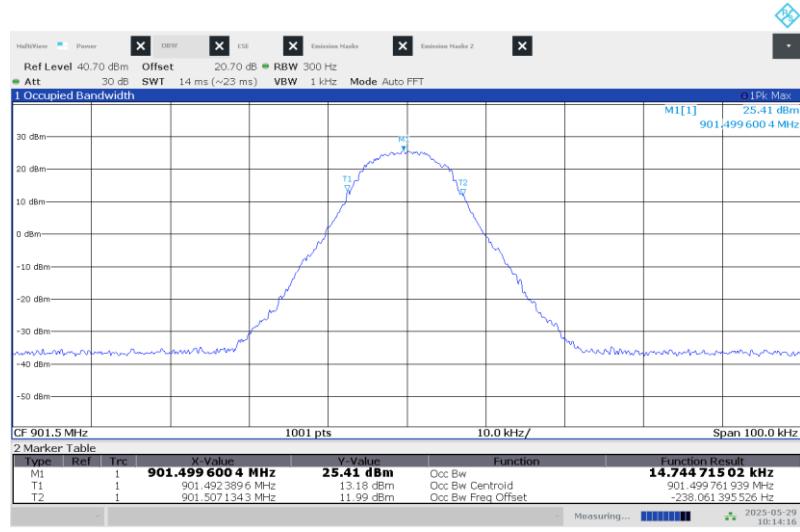


901.5MHz – 8FSK Mode



10:14:17 AM 05/29/2025

930.5MHz – mPass 5k Mode



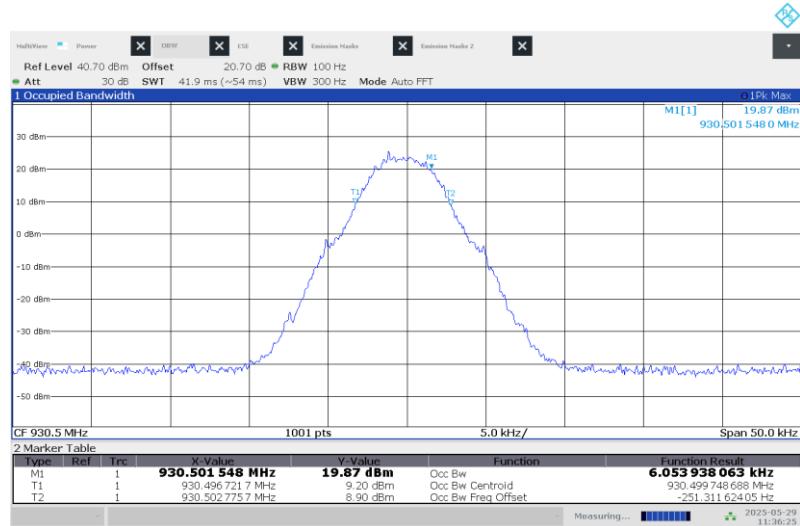
11:34:58 AM 05/29/2025

930.5MHz – mPass 10k Mode

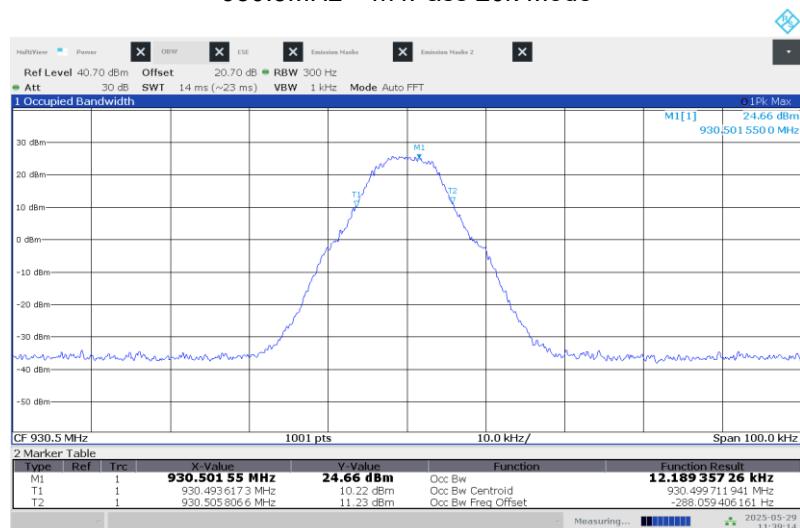


11:37:54 AM 05/29/2025

930.5MHz – m4Pass 10k Mode



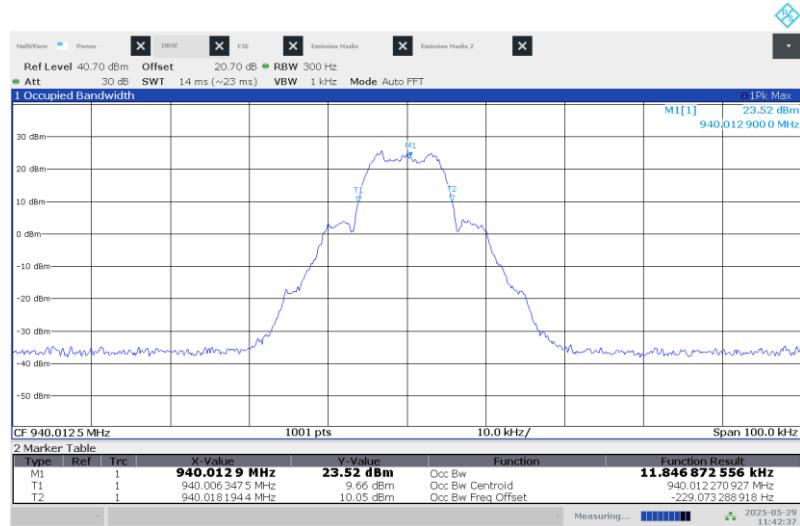
930.5MHz – m4Pass 20k Mode



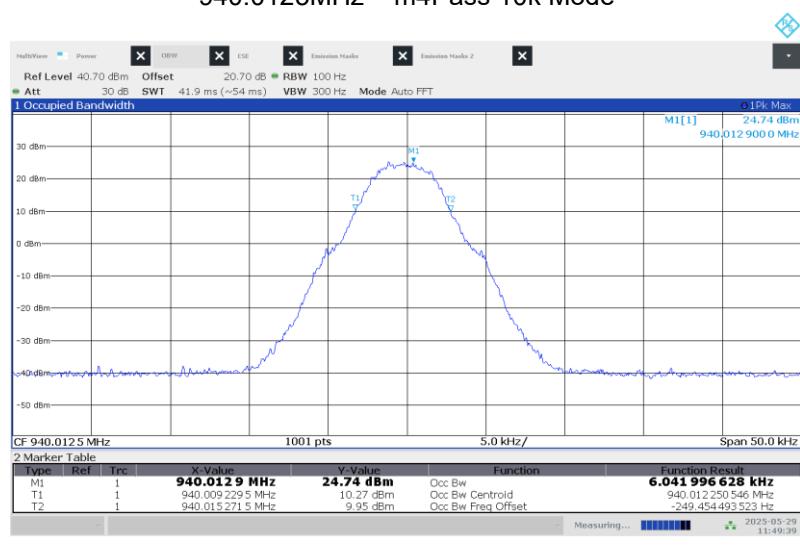
940.0125MHz – mPass 5k Mode



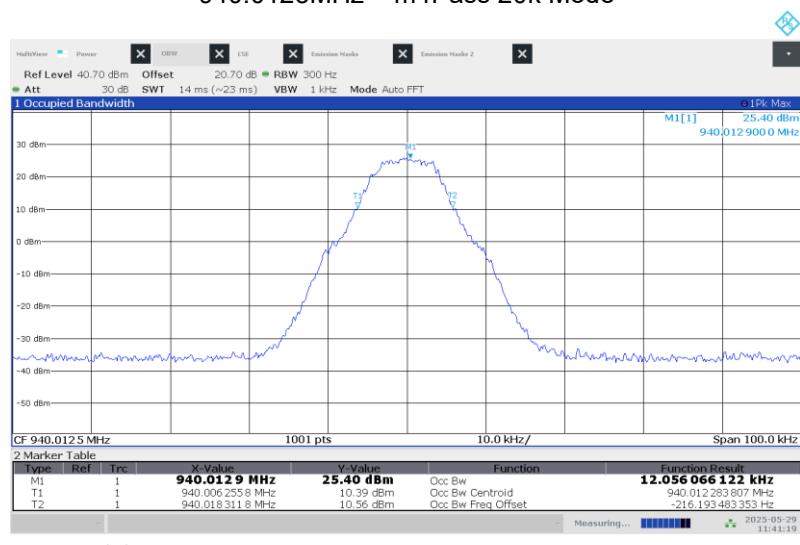
940.0125MHz – mPass 10k Mode



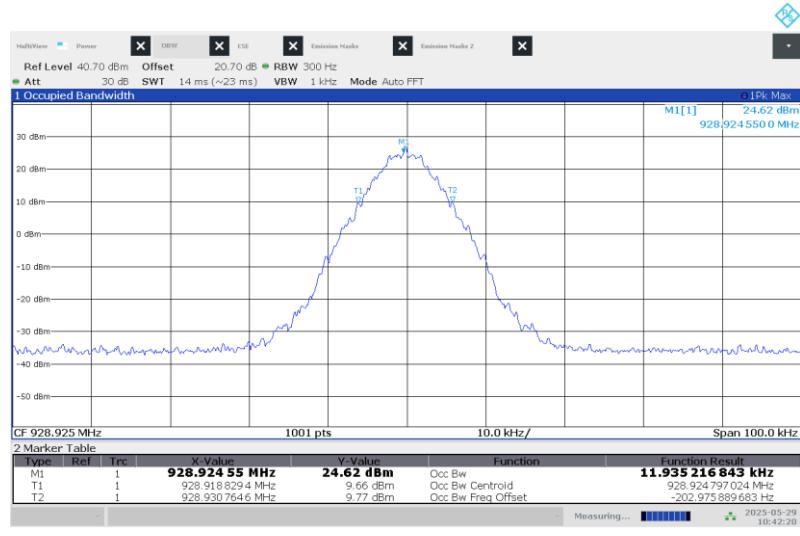
940.0125MHz – m4Pass 10k Mode



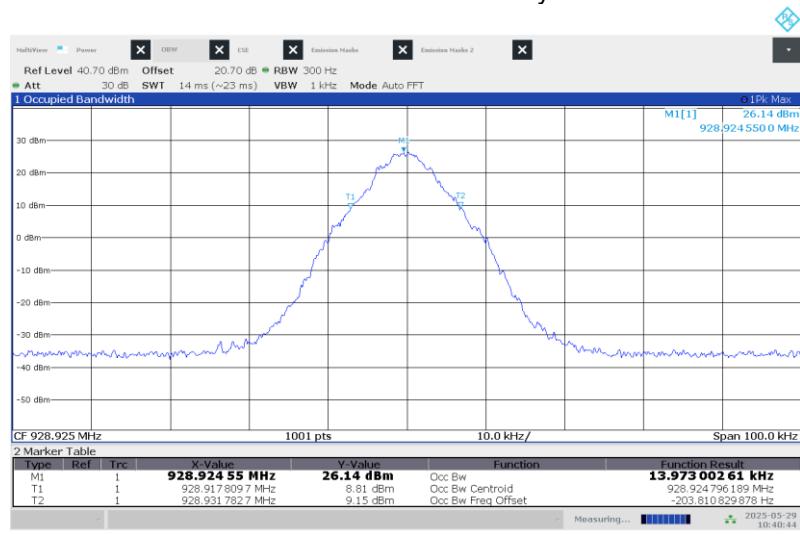
940.0125MHz – m4Pass 20k Mode



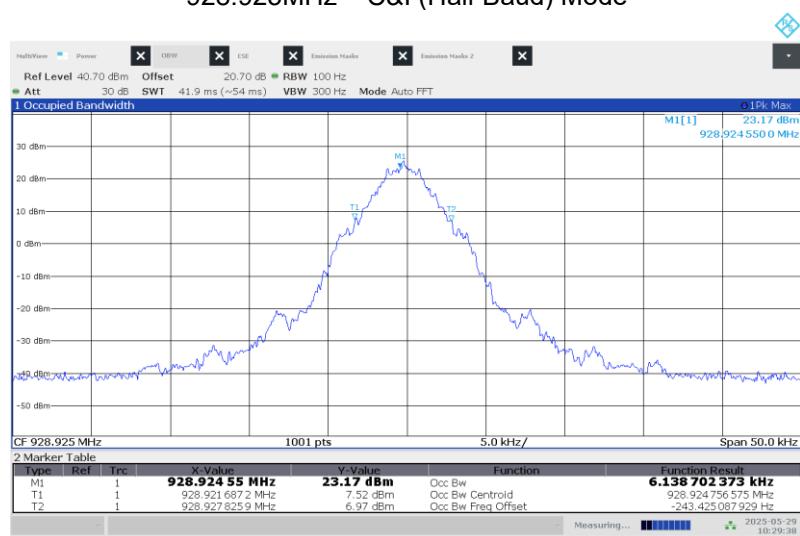
928.925MHz –Normal Mode



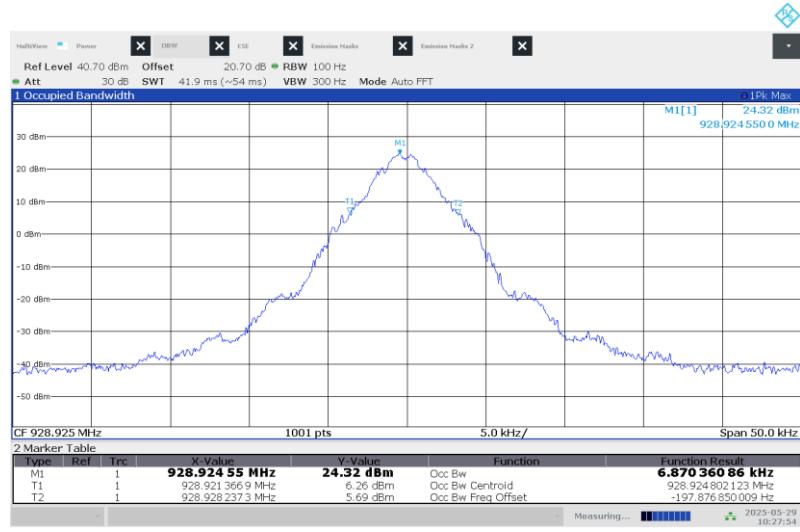
928.925MHz – Double Density Mode



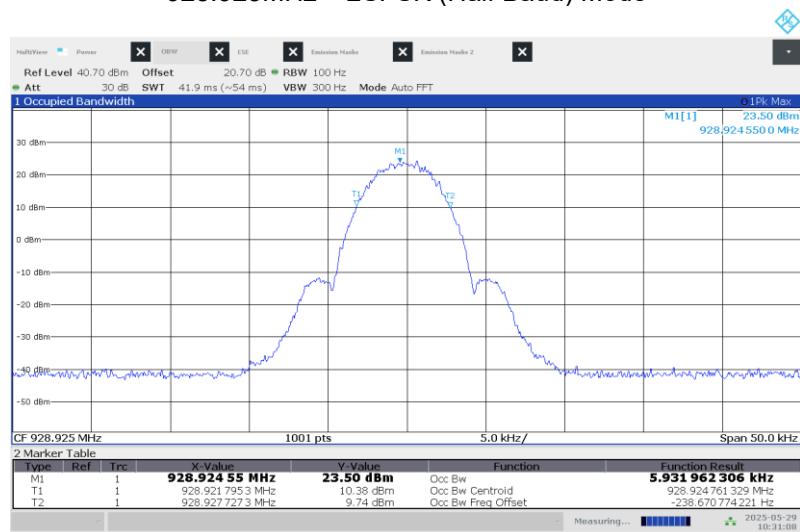
928.925MHz – C&I (Half Baud) Mode



928.925MHz – Priority Mode



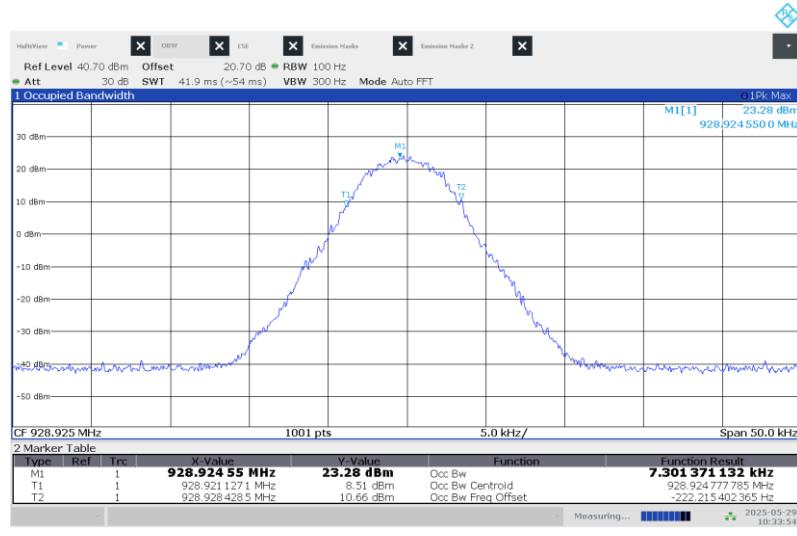
928.925MHz – 2SFSK (Half Baud) Mode



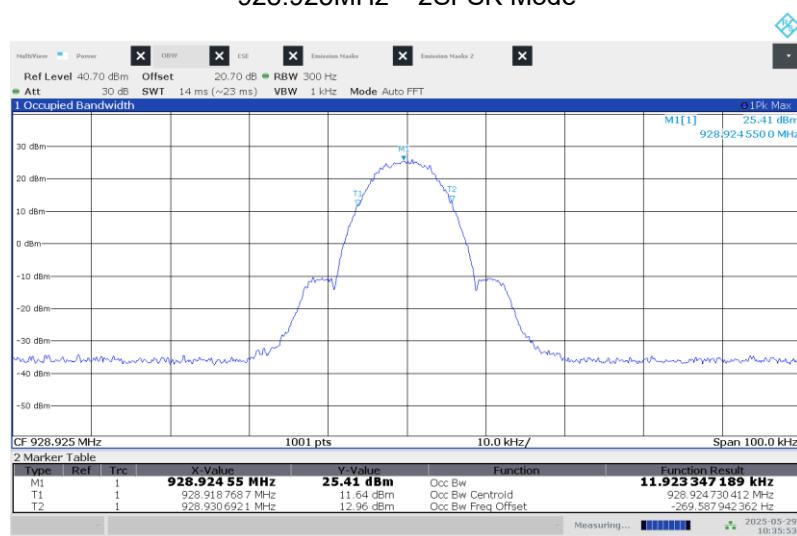
928.925MHz – 4SFSK (Half Baud) Mode



928.925MHz – 8SFSK (Half Baud) Mode



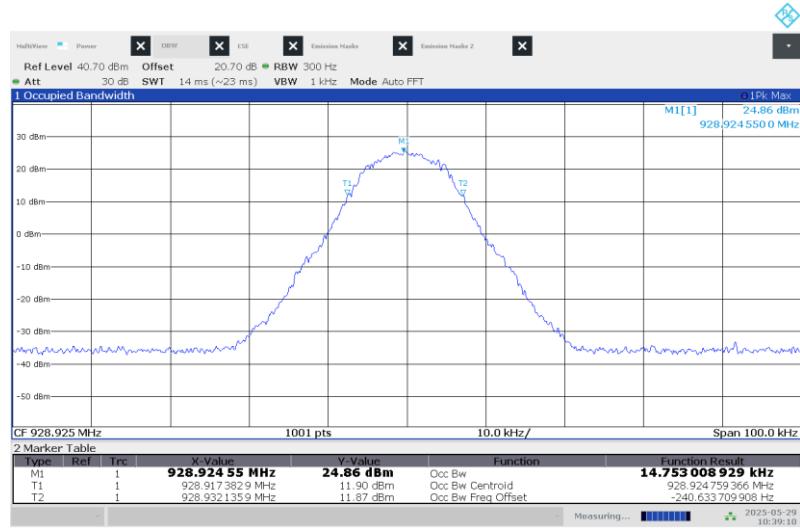
928.925MHz – 2SFSK Mode



928.925MHz – 4SFSK Mode

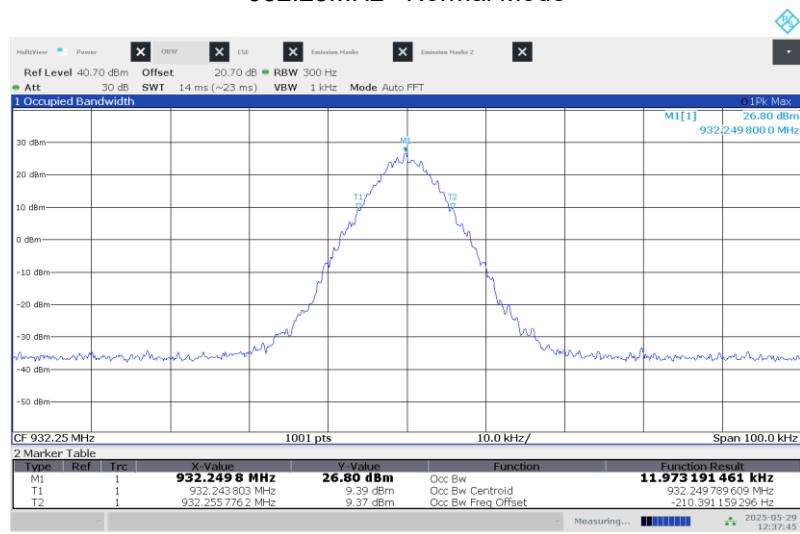


928.925MHz – 8SFSK Mode



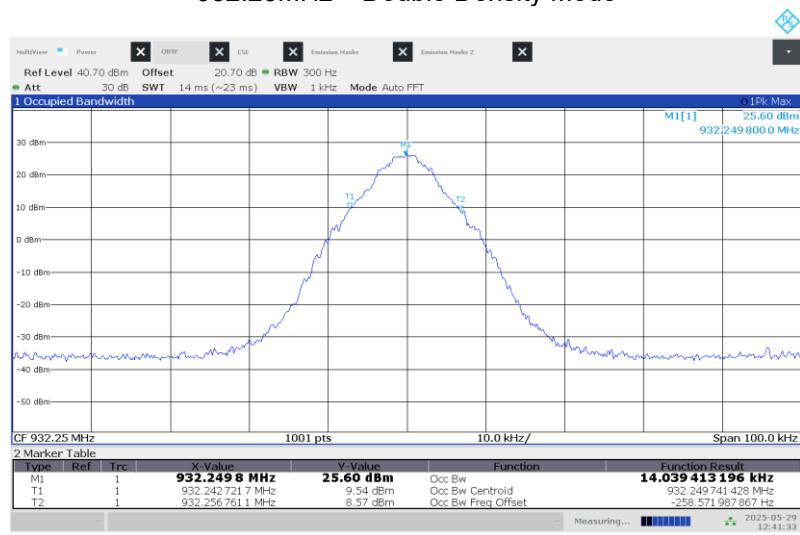
10:39:10 AM 05/29/2025

932.25MHz –Normal Mode



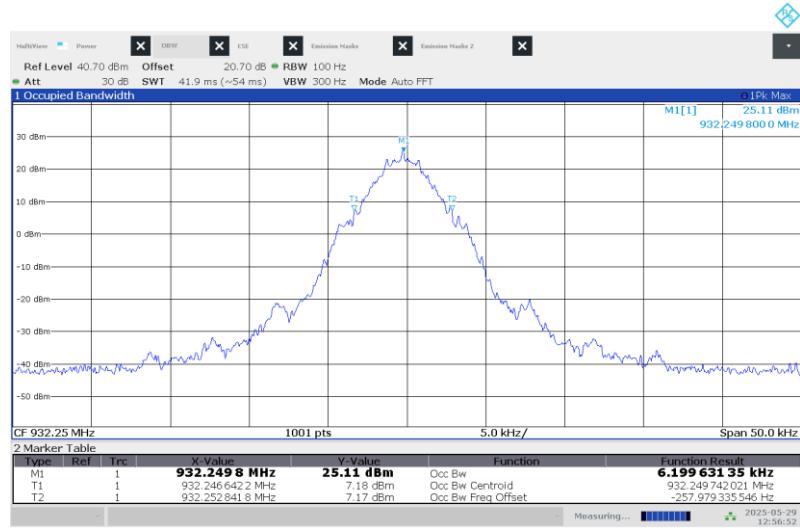
12:37:46 PM 05/29/2025

932.25MHz – Double Density Mode

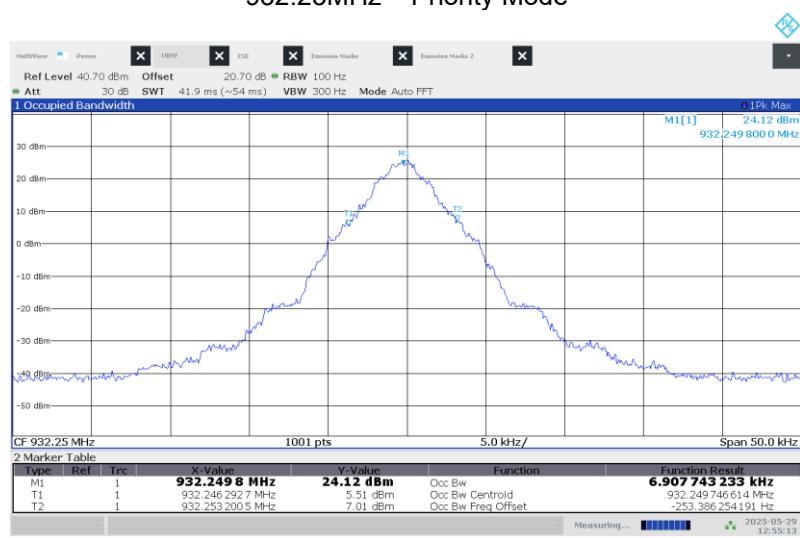


12:41:34 PM 05/29/2025

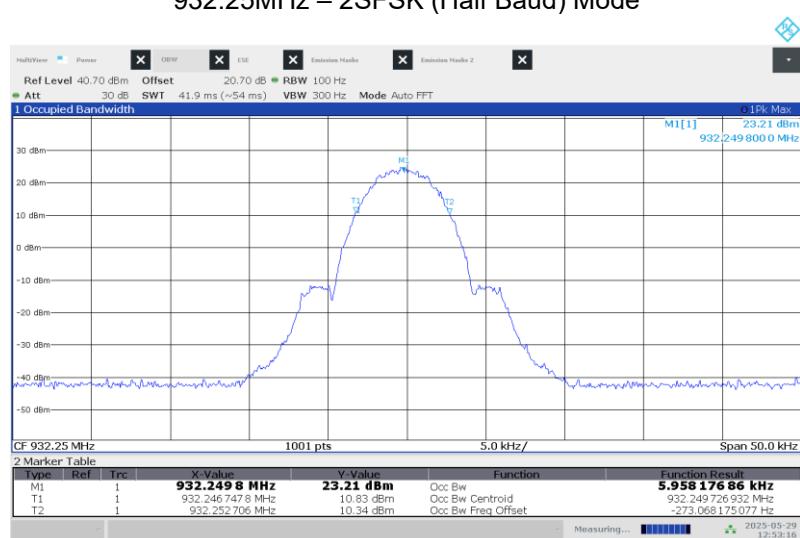
932.25MHz – C&I (Half Baud) Mode



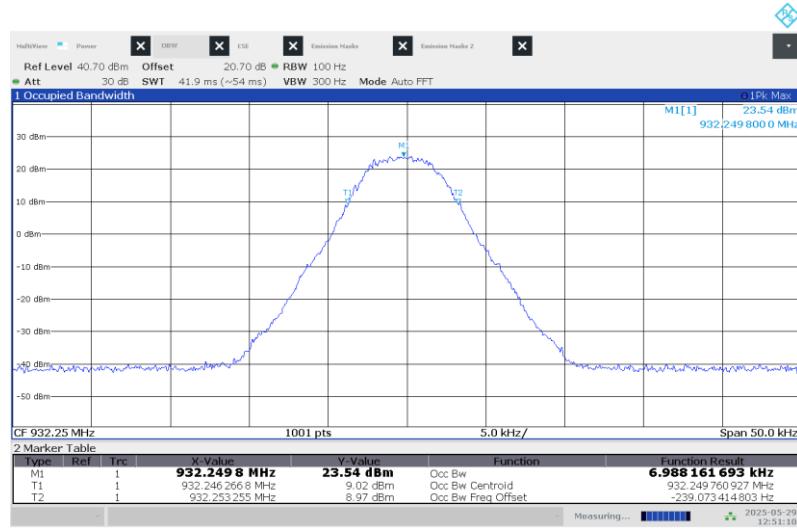
932.25MHz – Priority Mode



932.25MHz – 2SFSK (Half Baud) Mode

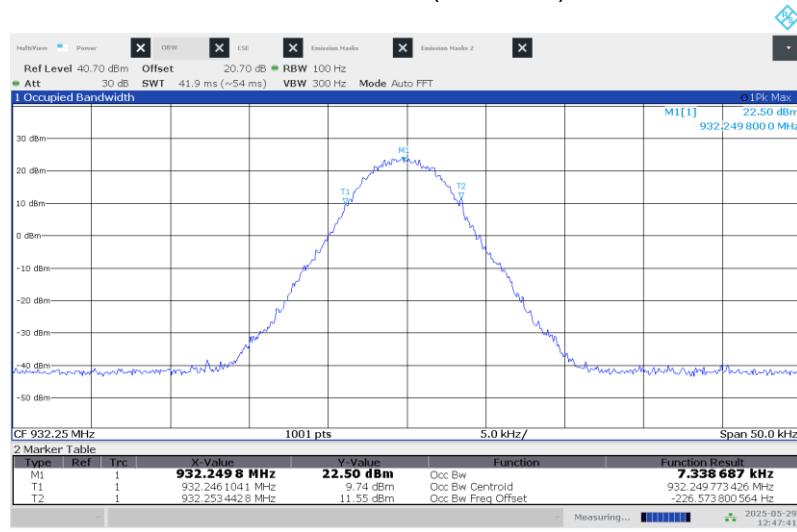


932.25MHz – 4SFSK (Half Baud) Mode



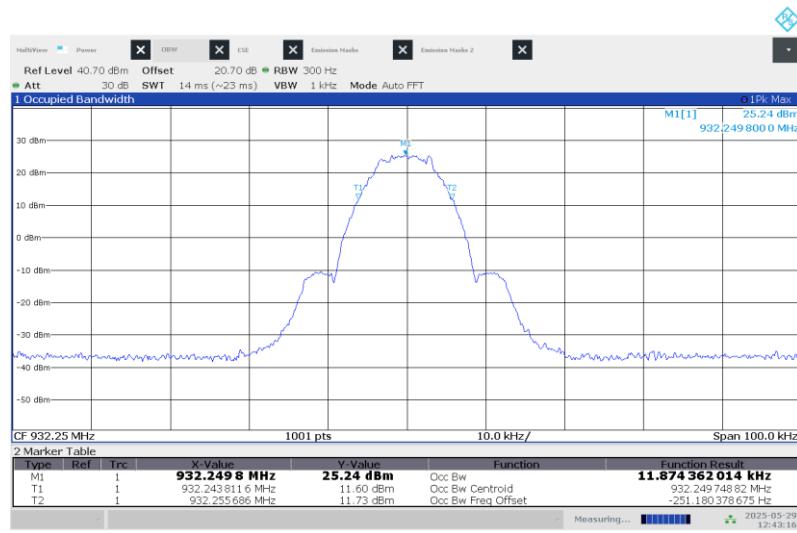
12:51:11 PM 05/29/2025

932.25MHz – 8SFSK (Half Baud) Mode



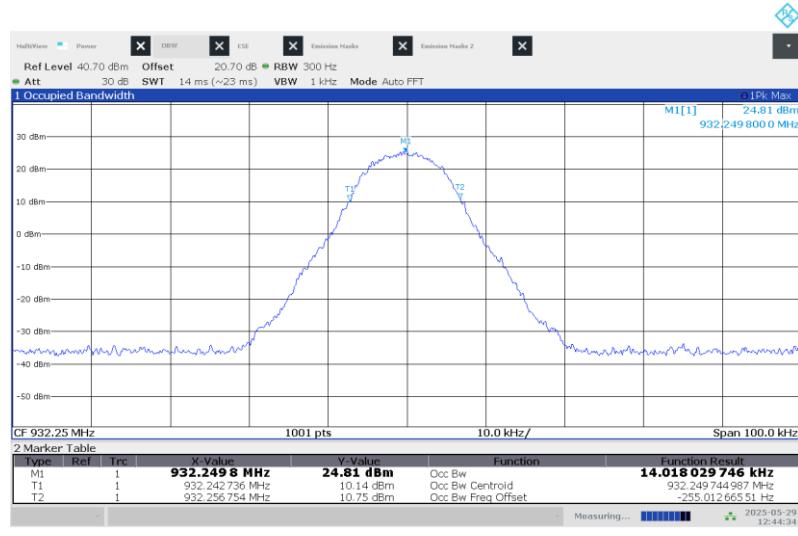
12:47:42 PM 05/29/2025

932.25MHz – 2SFSK Mode

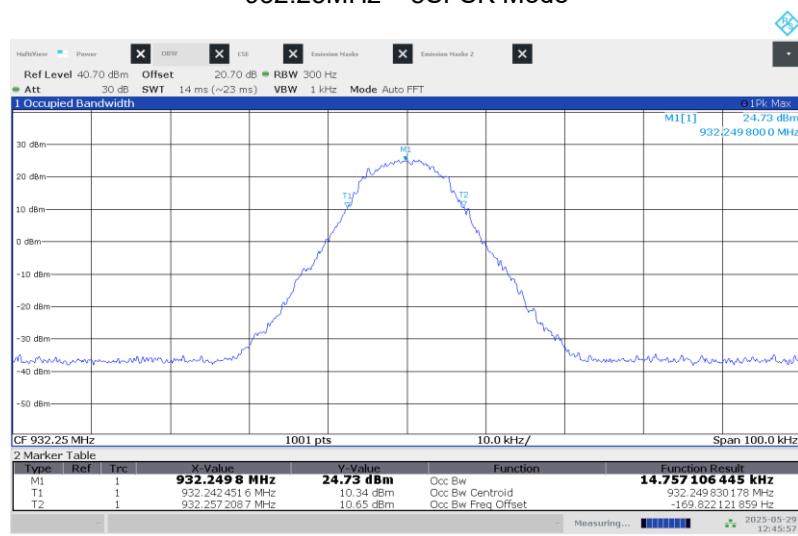


12:43:17 PM 05/29/2025

932.25MHz – 4SFSK Mode



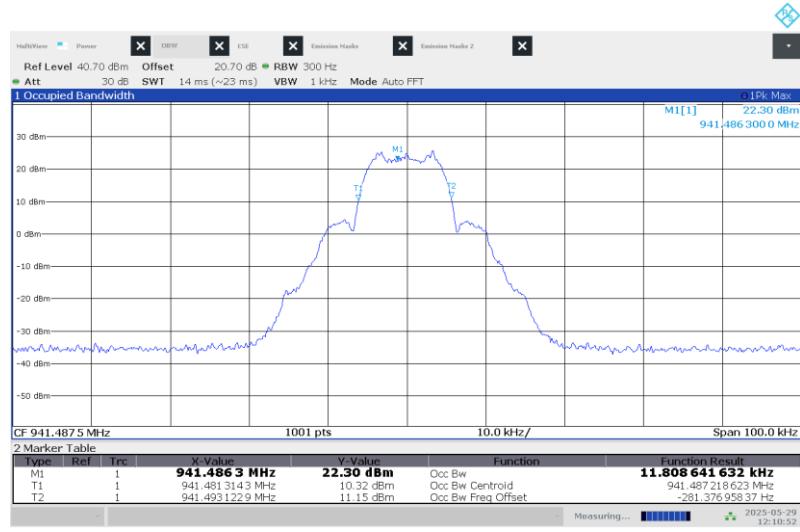
932.25MHz – 8SFSK Mode



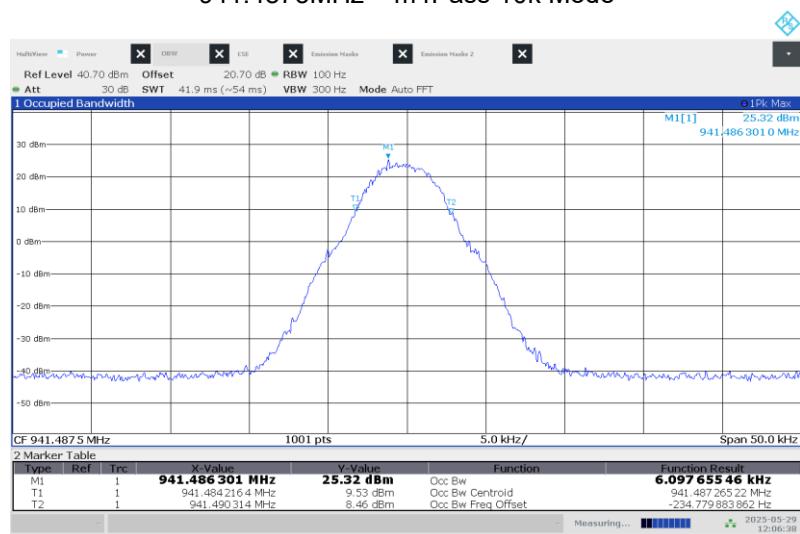
941.4875MHz – mPass 5k Mode



941.4875MHz – mPass 10k Mode



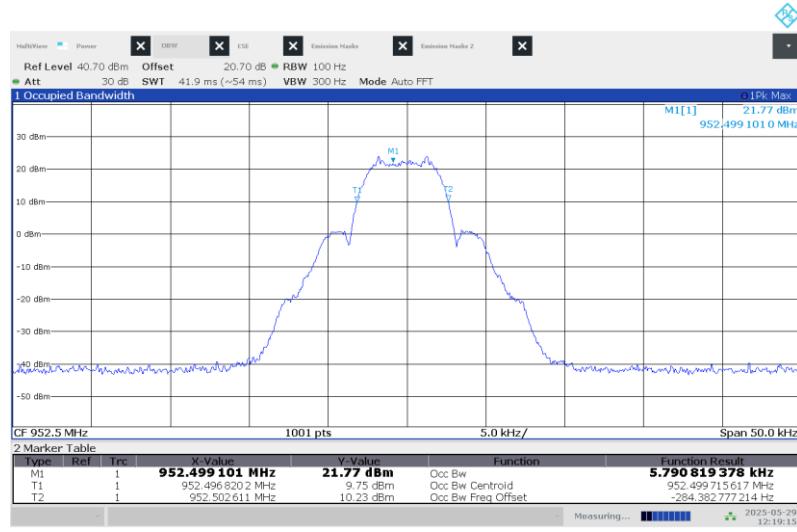
941.4875MHz – m4Pass 10k Mode



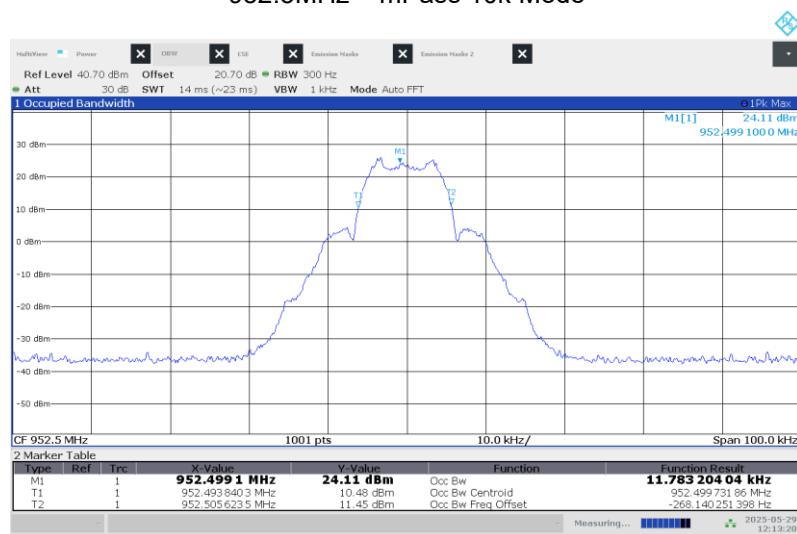
941.4875MHz – m4Pass 20k Mode



952.5MHz – mPass 5k Mode



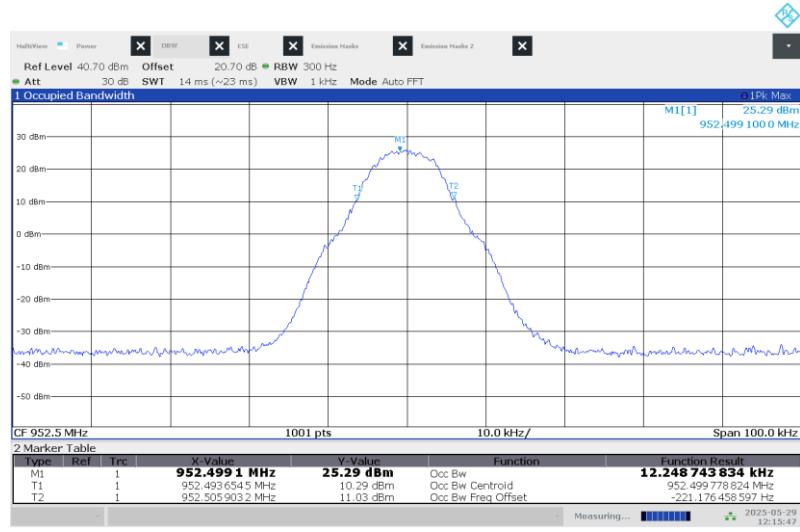
952.5MHz – mPass 10k Mode



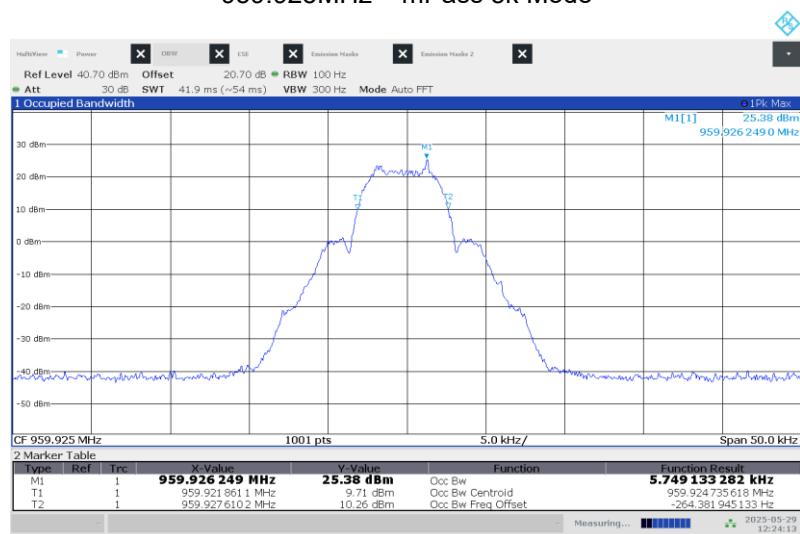
952.5MHz – m4Pass 10k Mode



952.5MHz – m4Pass 20k Mode

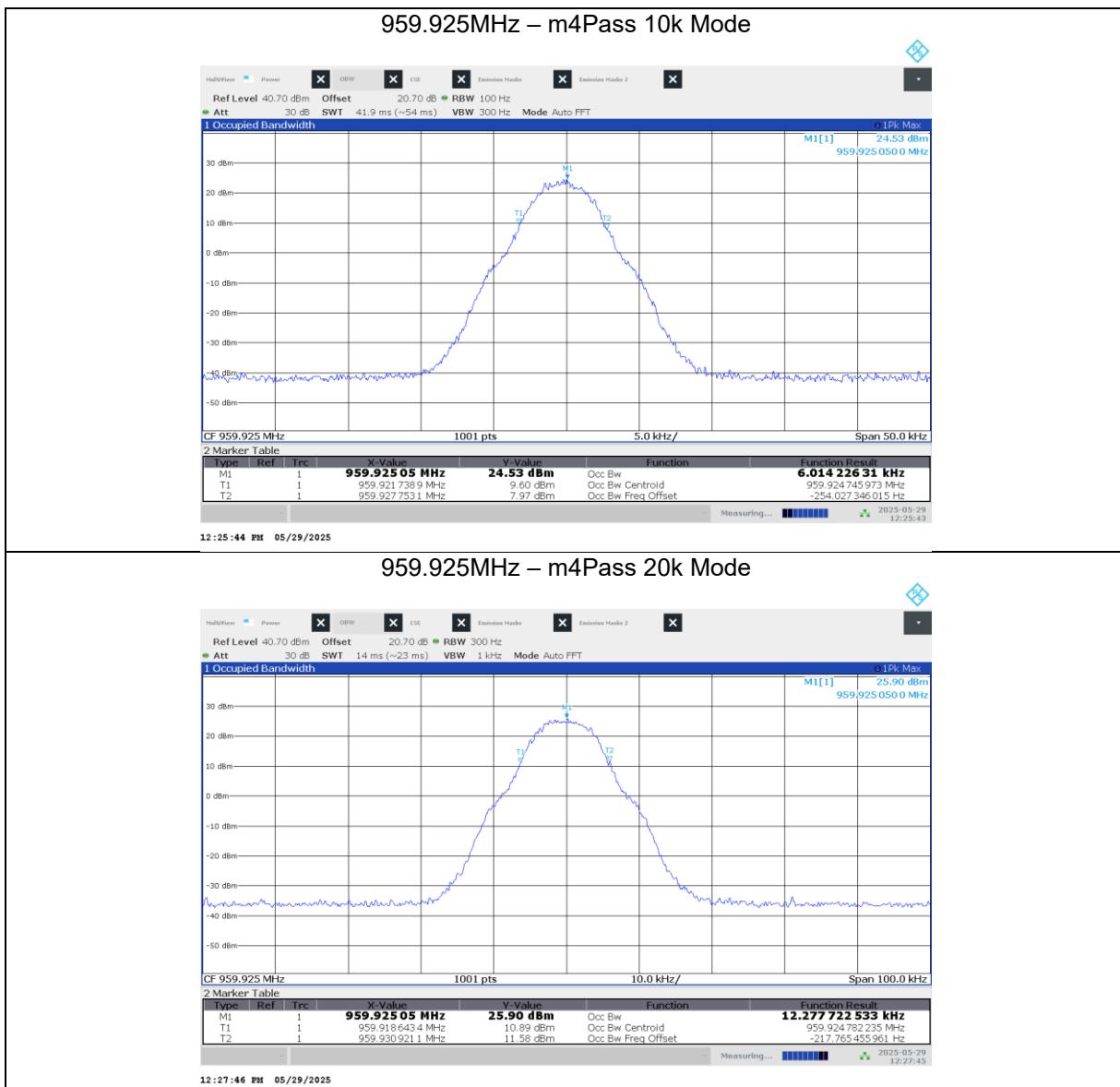


959.925MHz – mPass 5k Mode



959.925MHz – mPass 10k Mode



Test Personnel: Jeremy Pickens Test Date: 29 May 2025Product Standard: ANSI C63.26Ambient Temperature: 21.4°CRelative Humidity: 58.7%Atmospheric Pressure: 97.9kPa

9 Spurious Emissions at Antenna Terminals

9.1 Method

The methods defined in ANSI C63.26, Section 5.7.3 were applied for measuring the out of band emissions. The antenna port was connected directly to a spectrum analyzer through a cable and 20dB attenuator. The attenuation was accounted for by applying an offset to the spectrum analyzer for the attenuator and a transducer function for the cable loss. The spectrum analyzer was configured with the following Resolution Bandwidth (RBW) settings:

Frequency Range (MHz)	RBW
0.009 – 0.150	1 kHz
0.150 – 30	10 kHz
30 – 1000	100 kHz
1000 – 10000	1 MHz

TEST SITE: RF Bench

The RF bench consists of a Rohde & Schwarz TS8997 automated test system coupled with a temperature/humidity environmental chamber. Where applicable, 2.4 and 5GHz radio measurements are automated using the Rohde & Schwarz EMC32 test software. The TS8997 system houses a switch matrix (OSP), along with a spectrum analyzer, vector network analyzer, and analog signal generator.

9.2 Test Equipment

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
200001	Attenuator, 20 dB, <18GHz	Weinschel Corp	2	BK1848	07/26/2024	07/26/2025
212164	Barometric Pressure/Humidity Datalogger	Extech	SD700	109402	06/14/2024	06/14/2025
213502	Spectrum Analyzer (2Hz-43.5GHz)	Rohde & Schwarz	FSW43	102972	08/01/2024	08/01/2025

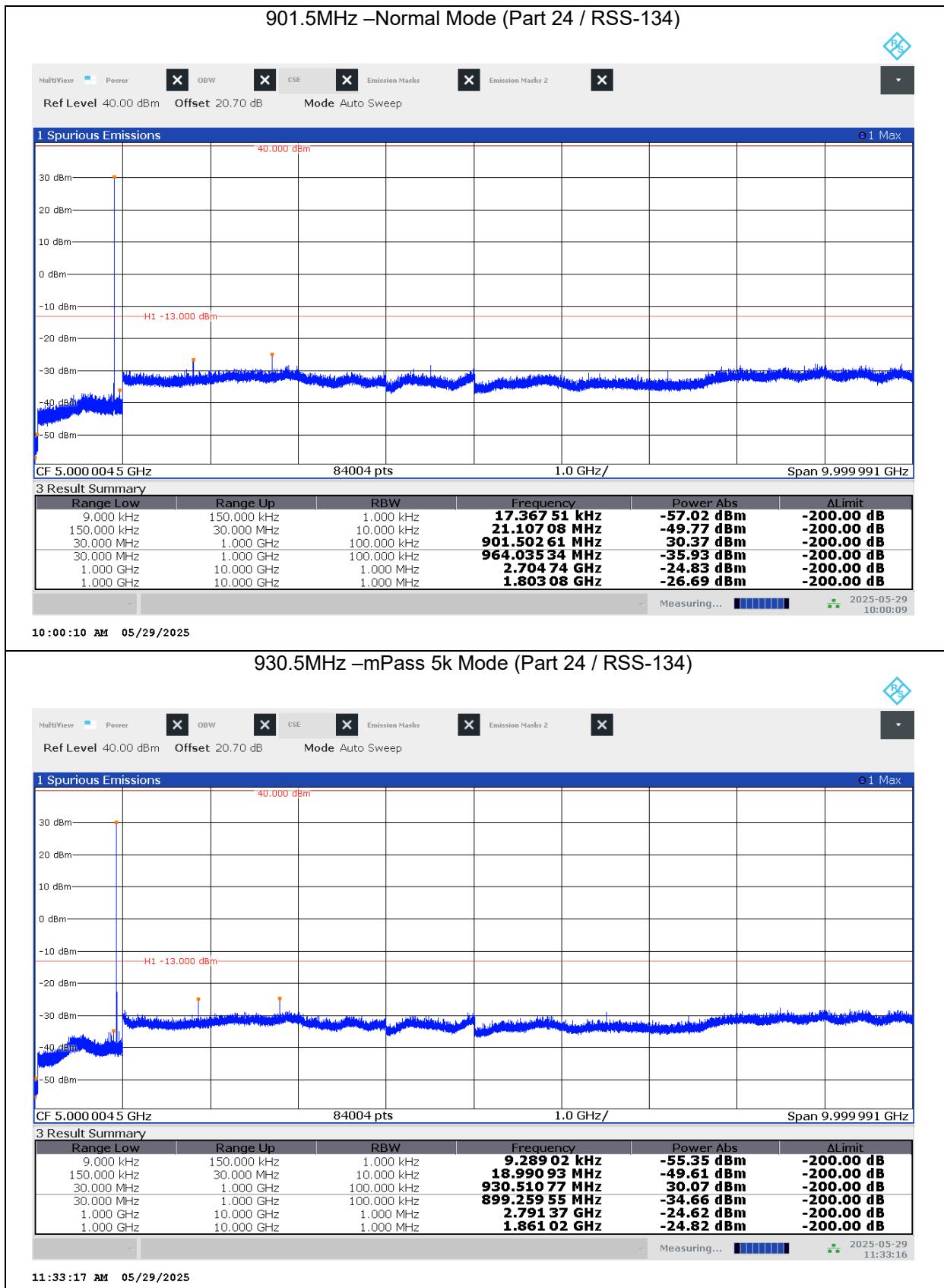
Software Utilized

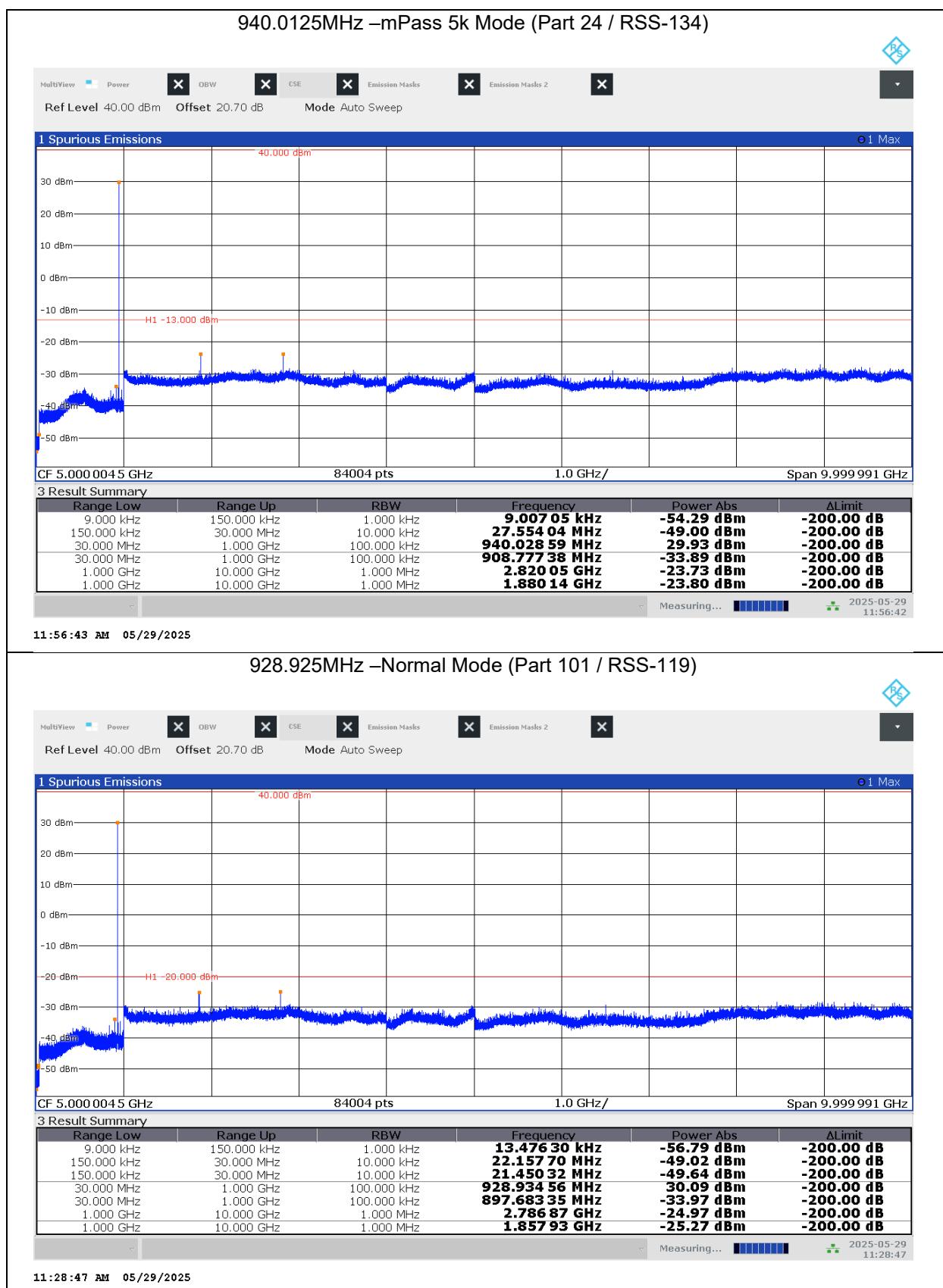
Name	Manufacturer	Version
RSCommander	Rohde & Schwarz	2.4.2 64-bit (2023)

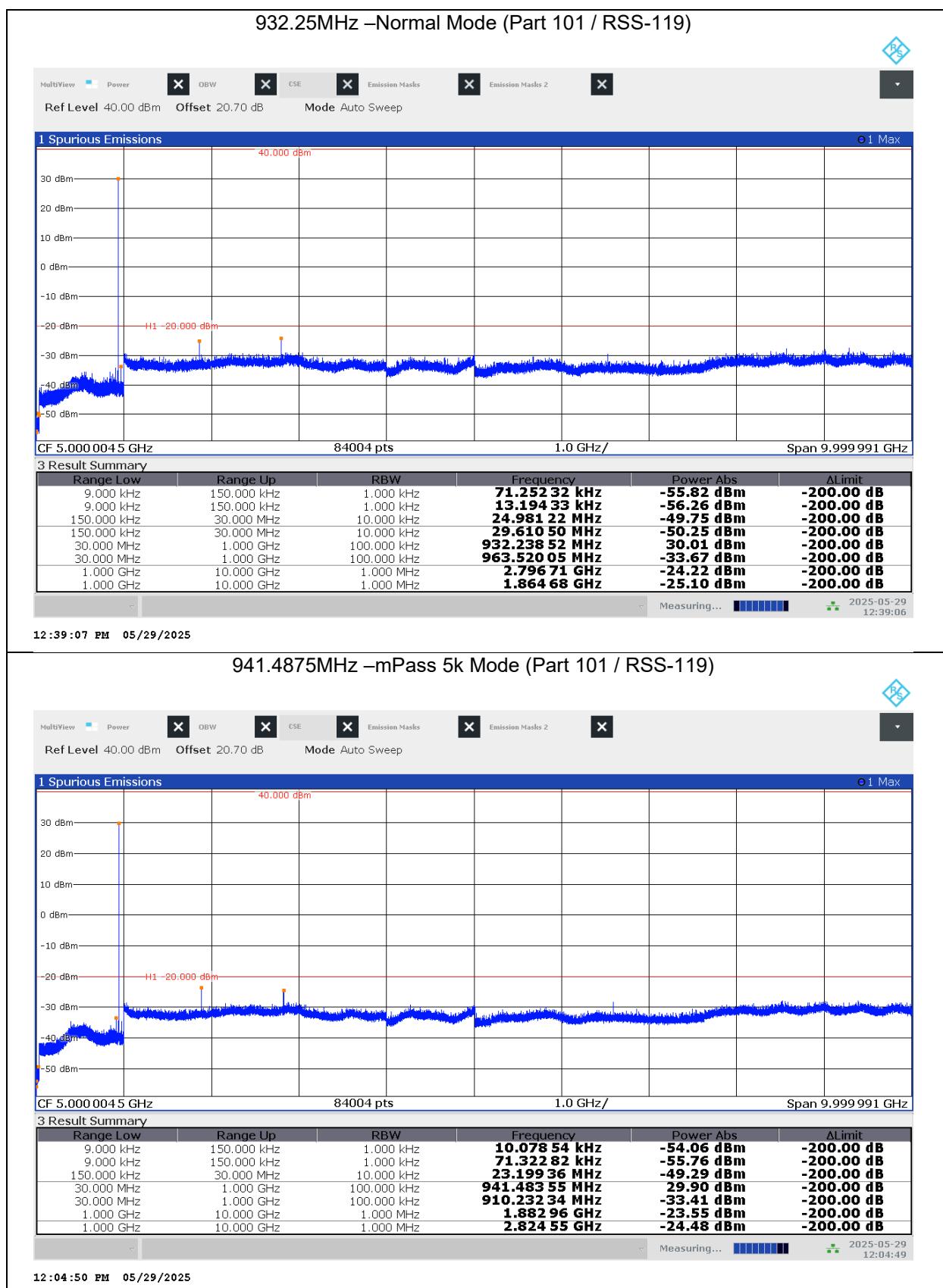
9.3 Results

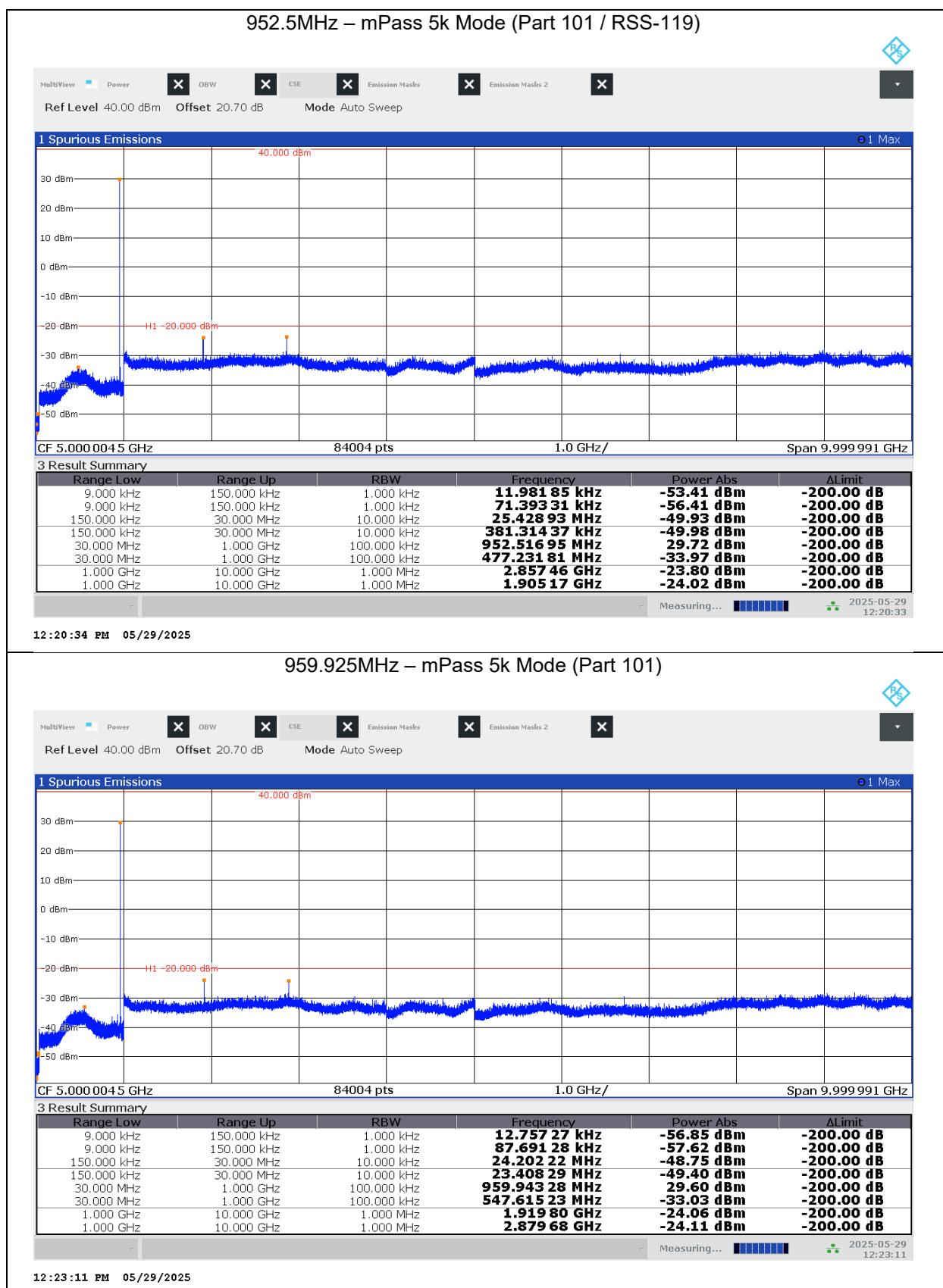
The sample tested was found to Comply.

9.4 Test Data









Test Personnel: Jeremy Pickens *JP*Test Date: 29 May 2025Reference Standard: ANSI C63.26Ambient Temperature: 21.4°CRelative Humidity: 58.7%Atmospheric Pressure: 97.9kPa

Note: Only the worst-case modulation was evaluated for each band.

10 Field Strength of Spurious Emissions

10.1 Method

The field strength methods defined in ANSI C63.26, Section 5.5.4 were applied for measuring the radiated spurious emissions. The EUT was tested at a height of 0.8m for measurements below 1GHz and at 1.5 meters for measurements above 1GHz. Radiated field strength pre-scans were performed at a distance of 3 meters using a bandwidth of 200Hz (9kHz to 150kHz), 10kHz (15kHz-30MHz), 100kHz (30MHz-1GHz), and 1MHz above 1GHz. The video bandwidth (VBW) was set to at least 3 times the RBW. The results were compared to the EIRP limits by applying a 95.2dB conversion to the applicable limit (e.g. -13dBm + 95.2 = 82.2dB μ V/m at 3 meters). For tabular data, the resulting field strength measurements were converted to EIRP using the same 95.2dB correction and compared to the applicable EIRP limit.

TEST SITE: 10 Meter Chamber

10 Meter Semi-Anechoic Chamber The test site for radiated emissions is located at 1950 Evergreen Blvd, Suite 100, Duluth, Georgia 30096. It is a 10-meter semi-anechoic chamber manufactured by Panashield. Embedded in the floor is a 3-meter diameter turntable.

Sample Calculation

The field strength was calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CF - AG$$

Where FS = Field Strength in dB μ V/m
 RA = Receiver Amplitude (including preamplifier) in dB μ V
 CF = Cable Attenuation Factor in dB
 AF = Antenna Factor in dB
 AG = Amplifier Gain in dB

In the following table(s), the reading shown on the data table reflects the preamplifier gain. An example for the calculations in the following table is as follows.

Assume a receiver reading of 52.0 dB μ V is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted, giving a field strength of 32 dB μ V/m

$$\begin{aligned} FS &= 32 \text{ dB}\mu\text{V}/\text{m} \\ RA &= 52.0 \text{ dB}\mu\text{V} \\ CF &= 1.6 \text{ dB} \\ AF &= 7.4 \text{ dB}/\text{m} \\ AG &= 29.0 \text{ dB} \end{aligned}$$

To convert from field strength to EIRP, the following equations were used

$$EIRP = (E \times d)^2 / 30$$

Where: E = field strength in V/m
 d = measurement distance in m
 $EIRP$ = equivalent isotropically radiated power in W

Working in dB units:

$$EIRP_{\text{dBm}} = E_{\text{dB}\mu\text{V}/\text{m}} + 20\log(d_{\text{m}}) - 104.77$$

For $d = 3$:

$$EIRP_{\text{dBm}} = E_{\text{dB}\mu\text{V}/\text{m}} - 95.2$$

Example

$$FS = RA + AF + CF - AG = 52.0 + 7.4 + 1.6 - 29.0 = 32.0 \text{ dB}\mu\text{V}/\text{m}$$

$$EIRP_{\text{dBm}} = 39.8 - 95.2 = -55.4 \text{ dBm}$$

10.2 Test Equipment

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
200162	EMI Receiver (20Hz-40GHz)	Rohde & Schwarz	ESU 40	100314	09/26/2024	09/26/2025
211262	Controller - Turntable and Mast	Sunol	SC99V	SC99V-1	VBU	VBU
211264	Mast - Antenna	Sunol	TWR95	NNN2	VBU	VBU
211386	Antenna, BiLog, 20-2000MHz	Chase	CBL6112B	2622	06/06/2024	06/06/2025
212166	Barometric Pressure/Humidity Datalogger	Extech	SD700	110392	04/02/2025	04/02/2026
213073	Antenna positioning tower	Sunol	TLT2	040314-5	VBU	VBU
213451	Omni -directional Comb Generator	Com-Power	CGO-520	281266	VBU	VBU
213453	Preamplifier 500MHz-18GHz	Com-Power	PAM-118A	18040030	10/16/2024	10/16/2025
213103	High Pass Filter - Rated 1GHz	Micro-Tronics	HPM50108	140	VBU ¹	VBU ¹
BOX-HORN1	Antenna, Horn, <18 GHz	EMCO	3115	9512-4632	06/06/2024	06/06/2025
MM5	RF Coax Cable 9KHz-18GHz	Maury Microwave	UC-N-MM-118	163203	04/01/2025	04/01/2026
MM5	RF Coax Cable 9KHz-18GHz	Maury Microwave	UC-N-MM78	1514381	07/08/2024	07/08/2025
MP10	RF Coax Cable 9KHz-18GHz	Fairview Microwave	FMCA1282-394	MP10	06/13/2024	06/13/2025
MP12	RF Coax Cable 9KHz-18GHz	Fairview Microwave	SCE180060505-700CM	MP12	01/23/2025	01/23/2026
MP-HF-3	RF Coax Cable 1-40GHz	Megaphase	GC12-K1K1-233-H	20809305001	10/21/2024	10/21/2025

1) The high pass filter was swept with a calibrated signal generator and spectrum analyzer and accounted for in the correction factors.

Software Utilized

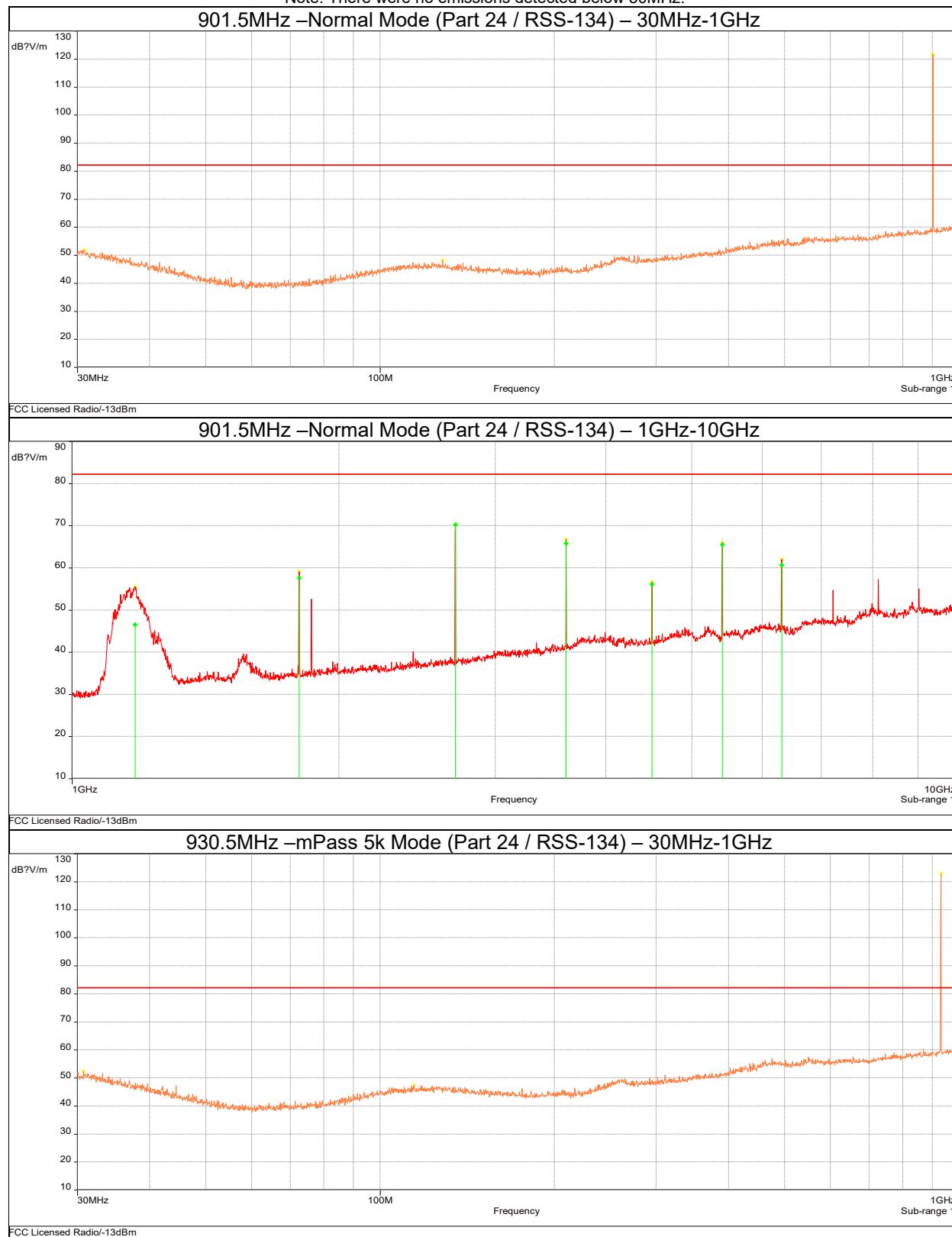
Name	Manufacturer	Version
BAT EMC	NEXIO	3.19.1.18

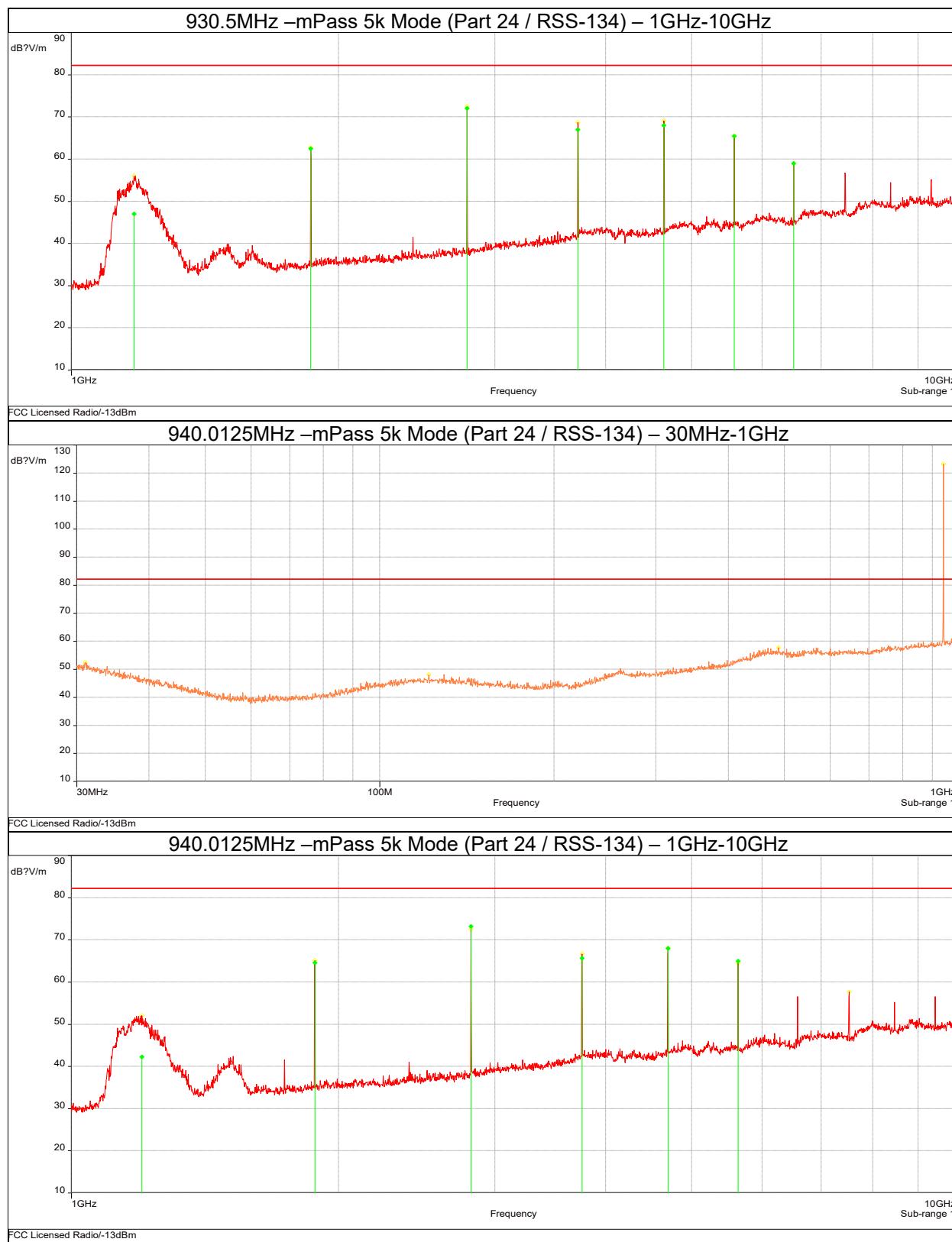
10.3 Results

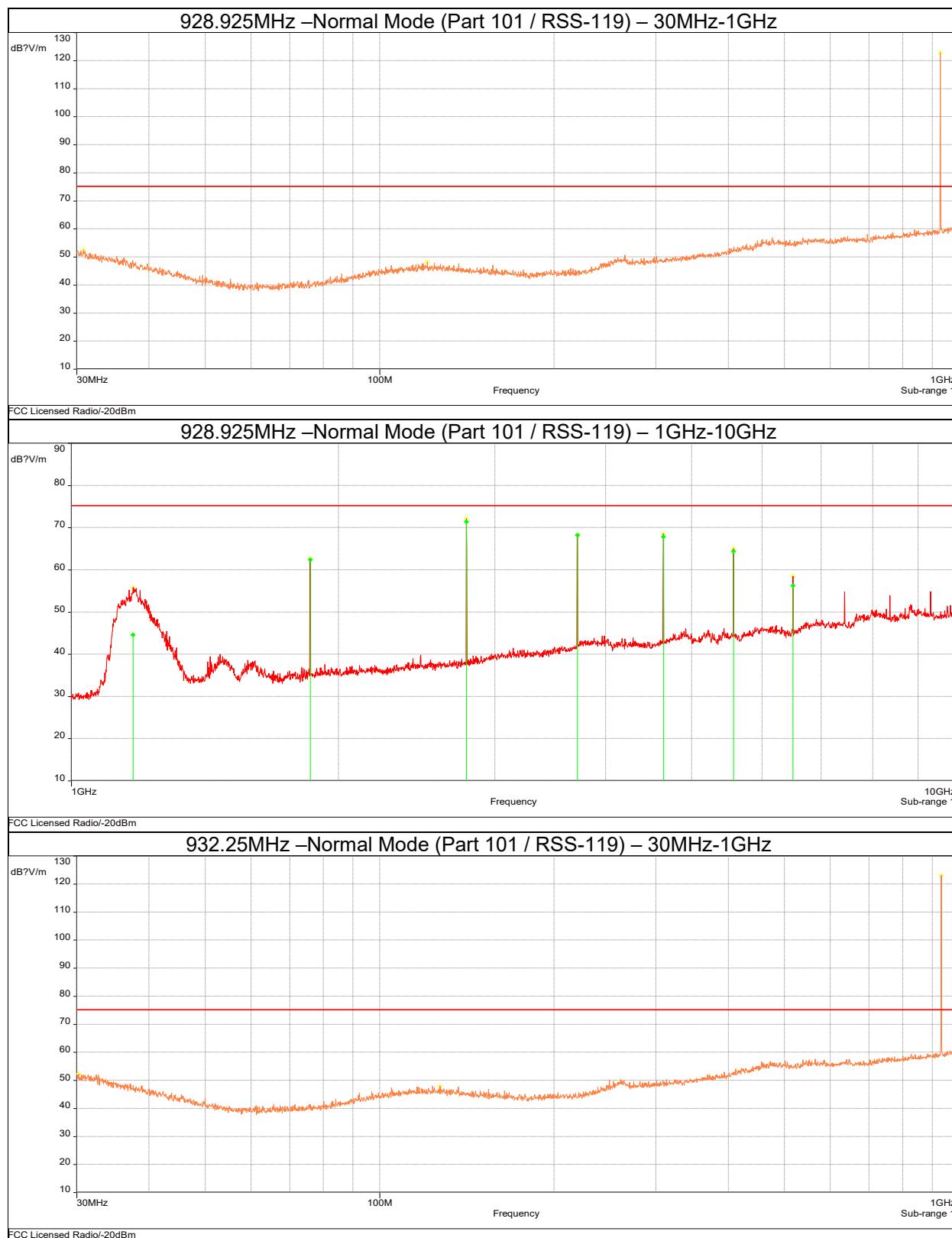
The sample tested was found to Comply.

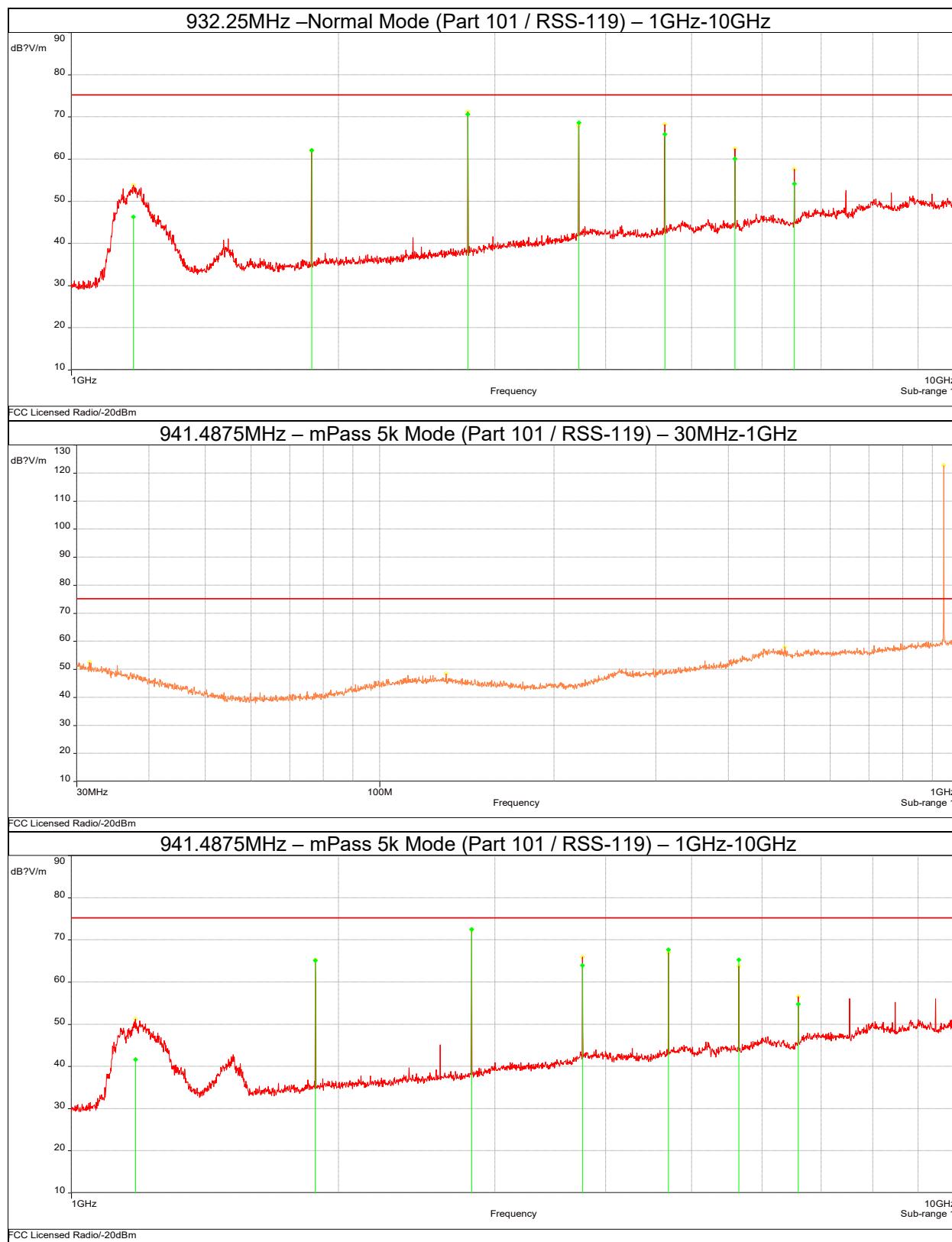
10.5 Plots/Data

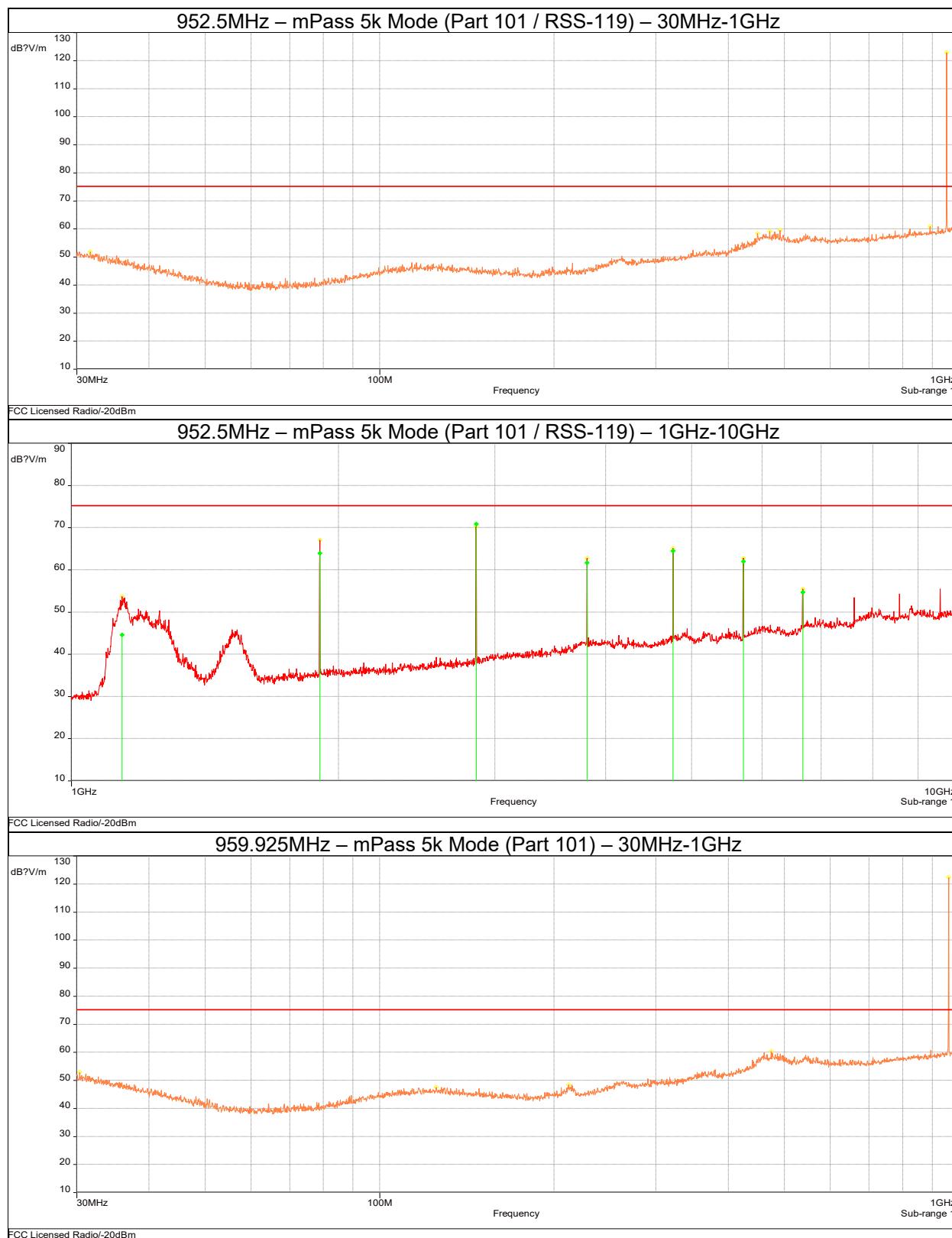
Note: There were no emissions detected below 30MHz.

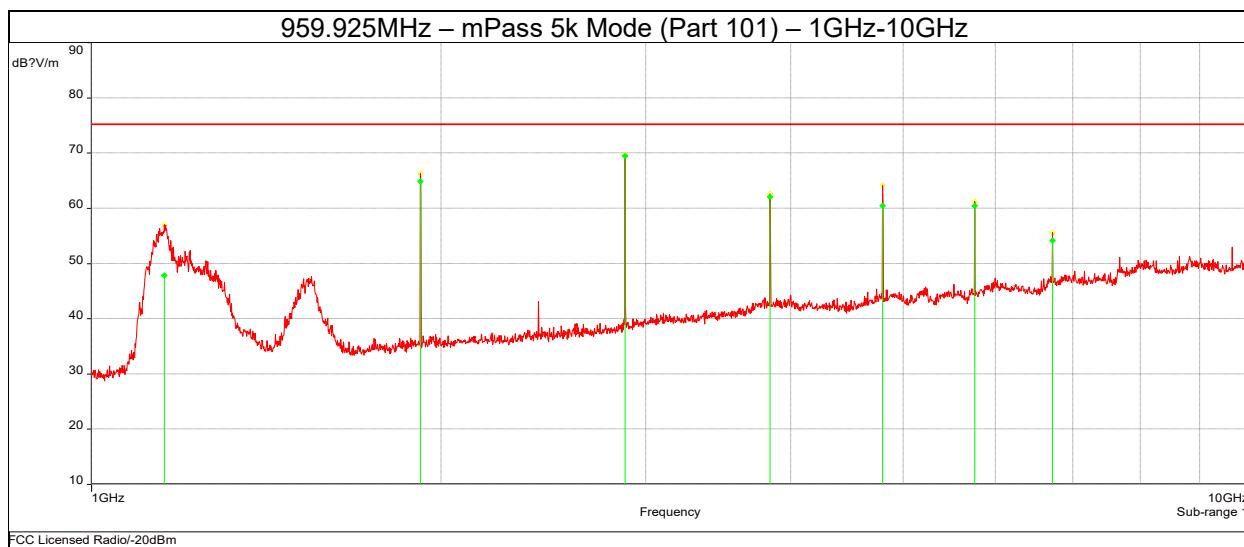












Tabular Data

TX Frequency (MHz)	Frequency (MHz)	Reading (dB μ V)	Correction (dB/m)	Field Strength (dB μ V/m)	Free Space Conversion (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
901.5	1167.681	37.20	-11.89	49.09	-95.2	-46.11	-13	-33.11
901.5	1803.000	47.60	-10.11	57.71	-95.2	-37.49	-13	-24.49
901.5	2704.500	54.79	-7.98	62.77	-95.2	-32.43	-13	-19.43
901.5	3606.000	57.25	-5.32	62.57	-95.2	-32.63	-13	-19.63
901.5	4507.500	54.44	-3.83	58.27	-95.2	-36.93	-13	-23.93
901.5	5409.000	59.76	-1.16	60.92	-95.2	-34.28	-13	-21.28
901.5	6310.500	59.83	0.10	59.73	-95.2	-35.47	-13	-22.47
930.5	1176.724	35.11	-11.89	47.00	-95.2	-48.20	-13	-35.2
930.5	1861.000	52.94	-9.57	62.51	-95.2	-32.69	-13	-19.69
930.5	2791.500	64.44	-7.63	72.07	-95.2	-23.13	-13	-10.13
930.5	3722.000	62.47	-4.52	66.99	-95.2	-28.21	-13	-15.21
930.5	4652.500	64.53	-3.44	67.97	-95.2	-27.23	-13	-14.23
930.5	5583.000	64.50	-0.94	65.44	-95.2	-29.76	-13	-16.76
930.5	6513.500	59.07	0.09	58.98	-95.2	-36.22	-13	-23.22
940.0125	1200.201	30.44	-11.83	42.27	-95.2	-52.93	-13	-39.93
940.0125	1880.025	55.11	-9.49	64.60	-95.2	-30.60	-13	-17.6
940.0125	2820.038	65.68	-7.52	73.20	-95.2	-22.00	-13	-9
940.0125	3760.050	61.48	-4.22	65.70	-95.2	-29.50	-13	-16.5
940.0125	4700.063	64.82	-3.21	68.03	-95.2	-27.17	-13	-14.17
940.0125	5640.075	64.08	-0.87	64.95	-95.2	-30.25	-13	-17.25
928.925	1172.927	32.73	-11.89	44.62	-95.2	-50.58	-20	-30.58
928.925	1857.850	52.80	-9.59	62.39	-95.2	-32.81	-20	-12.81
928.925	2786.775	63.73	-7.66	71.39	-95.2	-23.81	-20	-3.81
928.925	3715.700	63.71	-4.57	68.28	-95.2	-26.92	-20	-6.92
928.925	4644.625	64.39	-3.47	67.86	-95.2	-27.34	-20	-7.34
928.925	5573.550	63.45	-0.96	64.41	-95.2	-30.79	-20	-10.79
928.925	6502.475	56.36	0.07	56.29	-95.2	-38.91	-20	-18.91
932.25	1174.051	34.43	-11.89	46.32	-95.2	-48.88	-20	-28.88
932.25	1864.500	52.55	-9.56	62.11	-95.2	-33.09	-20	-13.09
932.25	2796.750	63.06	-7.61	70.67	-95.2	-24.53	-20	-4.53
932.25	3729.000	64.20	-4.45	68.65	-95.2	-26.55	-20	-6.55
932.25	4661.250	62.52	-3.40	65.92	-95.2	-29.28	-20	-9.28
932.25	5593.500	59.16	-0.92	60.08	-95.2	-35.12	-20	-15.12
932.25	6525.750	54.25	0.12	54.13	-95.2	-41.07	-20	-21.07
941.4875	1180.521	29.74	-11.89	41.63	-95.2	-53.57	-20	-33.57
941.4875	1882.975	55.68	-9.46	65.14	-95.2	-30.06	-20	-10.06
941.4875	2824.463	64.96	-7.52	72.48	-95.2	-22.72	-20	-2.72
941.4875	3765.950	59.76	-4.19	63.95	-95.2	-31.25	-20	-11.25
941.4875	4707.438	64.46	-3.21	67.67	-95.2	-27.53	-20	-7.53
941.4875	5648.925	64.39	-0.86	65.25	-95.2	-29.95	-20	-9.95
941.4875	6590.413	55.12	0.30	54.82	-95.2	-40.38	-20	-20.38
952.5	1139.999	32.80	-11.81	44.61	-95.2	-50.59	-20	-30.59
952.5	1905.000	54.66	-9.31	63.97	-95.2	-31.23	-20	-11.23
952.5	2857.500	63.54	-7.38	70.92	-95.2	-24.28	-20	-4.28
952.5	3810.000	57.70	-4.01	61.71	-95.2	-33.49	-20	-13.49
952.5	4762.500	61.29	-3.19	64.48	-95.2	-30.72	-20	-10.72
952.5	5715.000	61.20	-0.83	62.03	-95.2	-33.17	-20	-13.17
952.5	6667.500	55.38	0.63	54.75	-95.2	-40.45	-20	-20.45
959.925	1154.999	36.00	-11.87	47.87	-95.2	-47.33	-20	-27.33
959.925	1919.850	55.67	-9.26	64.93	-95.2	-30.27	-20	-10.27
959.925	2879.775	62.19	-7.29	69.48	-95.2	-25.72	-20	-5.72
959.925	3839.700	58.14	-3.93	62.07	-95.2	-33.13	-20	-13.13
959.925	4799.625	57.32	-3.12	60.44	-95.2	-34.76	-20	-14.76
959.925	5759.550	59.65	-0.82	60.47	-95.2	-34.73	-20	-14.73
959.925	6719.475	54.94	0.79	54.15	-95.2	-41.05	-20	-21.05

Test Personnel: Jeremy PickensTest Date: 02 - 03 June 2025Ambient Temperature: 20.1 – 21.0°CReference Standard: ANSI C63.26Relative Humidity: 43.5 – 47.6%Atmospheric Pressure: 98.1 – 98.7kPa

Note: Only the worst-case modulation was evaluated for each band.

11 Measurement Uncertainty

Parameter	Expanded Uncertainty for Normal k factor equal to 2
Radio Frequency	0.07 PPM
Total RF Power (Conducted)	0.65 dB
Power Density (Conducted)	0.65 dB
RF Spurious (Conducted)	1.8 dB
Radiated Emissions (9kHz-30MHz)	4.7 dB
Radiated Emissions (30MHz-1GHz)	4.1 dB
Radiated Emissions (1GHz-18GHz)	4.5dB
Radiated Emissions (18GHz-40GHz)	4.7 dB
AC Line Conducted Emissions	2.8 dB
Temperature	0.7°
Humidity	3.9%

12 Revision History

Revision Level	Date	Report Number	Prepared By	Reviewed By	Notes
0	05 June 2025	106182196ATL-001	JOP	<i>BZL</i>	Original Issue